INDEX TO VOLUME II

ADAMS, A. ELIZABETH, and SHEVKET, FAZILÉ, The normal blood picture of white rats and the changes in the picture following thyroid feeding, 181

Adventitious heads in *Stenostomum leucops*, 44

Albino rat: effect of castration and ovariectomy on spontaneous activity and ability to learn of, 157; effect of thyroid feeding on blood picture of, 181, 191; normal blood of, 184; effects of bovine anterior pituitary extract on, 285

Allelocatalytic effect in cultures of *Paramecium*, 232

Amblystoma punctatum: experimental modification of nerve development in, 99; relation between embryo volume and susceptibility to KCN of embryos of, 125

Ammonium, effect of on heart rhythm of crayfish, 395, 405

Amoeba: changes in water content of, in relation to changes in protoplasmic structure, 535; method of measurement of volume of, 537; effect of mechanical stimulation on water content of, 547; effect of hypertonic solutions of glycerol, lactose, and urea on water content of, 549; effect of hydrogen-ion concentration on water content of, 557; changes in volumetric ratio between plasmagel and plasmasol in, 560

Anatomical patterns and behavior patterns, 439

Anterior pituitary extract: effect of, on developing albino rat, 285; effects of, on female genital system of albino rat, 295; effects of, on male genital system of albino rat, 296

Antibody formation against an animal's own tissues, 168

Artificial insemination, influence of high temperature on guinea-pig spermatozoa as determined by, 1

Associative hysteresis in marine flatworm, 322

Atrophy of anuran tail muscle during metamorphosis, 575

Axolotl, metamorphosis of Colorado, induced by inorganic iodine, 149

BAHRS, ALICE M., The effect of refrigeration upon the growth-promoting power of rabbit tissues for planarian worms, 491

BANTA, ARTHUR M., and BROWN, L. A.: Control of sex in Cladocera. I. Crowding the mothers as a means of controlling male production, 80; II. The unstable nature of the excretory products involved in male production, 93; IV. Relation between the rate of the mother's development and the sex of her young, 302; V. Experimentally accelerated development of mothers and sex of young; mammalian endocrine substances without specific effect on cladocerans, 309

Barium, effect of, on heart rhythm of crayfish, 401

BARTH, L. G., The effect of X-rays on the spermatozoa of *Drosophila*, 172

Behavior patterns and anatomical patterns, 439

Blood, effect of thyroid feeding on, in albino rat, 181, 191

BODINE, J. H., Factors influencing the rate of respiratory metabolism of a developing egg (Orthoptera), 459

BROWN, L. A., and BANTA, A. M., Control of sex in Cladocera. I. Crowding the mothers as a means of controlling male production, 80; II. The unstable nature of the excretory products involved in male production, 93; IV. Relation between the rate of the mother's development and the sex of her young, 302; V. Experimentally accelerated development of mothers and sex of young; mammalian endocrine substances without specific effect on cladocerans, 309

BUCHANAN, J. WILLIAM, The relation between embryo volume and the susceptibility of *Amblystoma punctatum* embryos to potassium cyanide, 125

Cambarus clarkii, effects of lithium, ammonium, strontium, and barium ions on heart rhythm of, 395

Castration, effect of, on spontaneous activity and ability to learn of albino rat, 157

CHALKLEY, H. W., Changes in water content in *Amoeba* in relation to changes in its protoplasmic structure, 535

CHILD, C. M., Lateral grafts and incisions as organizers in the hydroid, *Corymorpha*, 342

Cladocera, control of sex in, 80, 93, 302, 309

CLAUSEN, H. J., and HELFF, O. M., Studies on amphibian metamorphosis. V. The atrophy of anuran tail muscle during metamorphosis, 575

Corpus luteum hormone: experimental relaxation of pelvic ligaments of guinea pig by, 59; presence of, in blood serum of pregnant rabbits, 61, 67; presence of, in other mammals, 69; some properties of, 73

Corymorpha, lateral grafts and incisions as organizers in, 342

Crayfish, effect of lithium, ammonium, strontium, and barium ions on heart rhythm of, 395

Crustacean heart, effect of lithium, ammonium, strontium, and barium ions on rhythm of, 395

Culture media, effect of different, on reconstitution of *Stenostomum leucops*, 38

Dark adaptation, in eye of *Eristalis tenax*, 483

Didinium: excretion of nitrogenous substances in, 375, 379; rate of nitrogenous excretion in, 385

DOLLEY, WILLIAM L. JR., Dark adaptation in the eye of *Eristalis tenax*, 483

Drosophila, effect of X-rays on spermatozoa of, 172

DYKSHORN, S., and TUTTLE, W. W., A comparison of spontaneous activity of the albino rat with the ability to learn, with special reference to the effect of castration and ovariectomy on these processes, 157

Echinoderms, effect of oxygen tension on oxygen consumption of, 505

Embryo volume, effects of various solutions on, in *Amblystoma punctatum*, 140

Eristalis tenax, dark adaptation in eye of, 483

Ethyl alcohol, acceleration of development of Cladocera by, 312

Excretory products: as factors in male production in Cladocera, 80, 93; nitrogenous, in Protozoa, 375

Fission: an experimental study of, in *Stenostomum*, 18; in headless pieces of *Stenostomum leucops*, 41; influence of sexuality on, in *Stenostomum grande*, 48

Flatfish, effect of illumination on, 495

Gel-sol ratio, changes in, in *Amoeba*, 560

Glycerol, effect of, on water content and protoplasmic structure of *Amoeba*, 549

Gradient, in reduction of osmic acid in cortex of *Paramecium*, 449

Grafts: of optic vesicle and portions of nasal placode to limb site in *Amblystoma*, 99; of skin in *Rana pipiens*, 255; lateral, as organizers in *Corymorpha*, 342; of anuran tail muscle to back, 578; of anuran back muscle to tail, 581; of anuran back and tail muscle to adjacent regions, 581

Growth-promoting power, effect of refrigeration on, in rabbit tissues, 491

Guinea pig: influence of high temperature on reproductive capacity of spermatozoa of, 1; experimental relaxation of pelvic ligaments of, by corpus luteum hormone, 59; antibody formation to own tissues in, 170

HELFF, O. M., Studies on amphibian metamorphosis. IV. Growth and differentiation of anuran tongue during metamorphosis, 334

HELFF, O. M., and CLAUSEN, H. J., Studies on amphibian metamorphosis. V. The atrophy of anuran tail muscle during metamorphosis, 575

HELLER, RICHARD E., New evidence for the function of the scrotum, 9

HENSHAW, PAUL S., Antibody formation against an animal's own tissues, 168

HERRICK, C. J., Anatomical patterns and behavior patterns, 439

HISAW, FREDERICK L., The corpus luteum hormone. I. Experimental relaxation of the pelvic ligaments of the guinea pig, 59

Histolysis, of tail skin during metamorphosis in *Rana pipiens*, 262

HOVEY, H. BIRNET, Associative hysteresis in marine flatworms, 322

Hydatina senta, male production in crowded and uncrowded cultures of, 269

Hydrogen-ion concentration: effect of, on water content of *Amoeba*, 557; effect of, on gel-sol ratio in *Amoeba*, 565

HYMAN, LIBBIE H., The effect of oxygen tension on oxygen consumption in *Planaria* and some echinoderms, 505

Hypophysectomy: in Colorado axolotl, 150; effects of, on brown leghorn fowl, 411; method of, in brown leghorn, 414

Hypophysis, effects of removal of, in brown leghorn fowl, 411

Hypsosetta guttulata, effects of differences in apparent source of illumination on, 495

Hysteresis, associative, in marine flatworms, 322

Illumination, effects of differences in apparent source of, on shade assumed by a flatfish, 495

INGRAM, W. R., Studies on amphibian neoteny. I. The metamorphosis of the Colorado axolotl by injection of inorganic iodine, 149

Integumentary pigmentation, in frog during metamorphosis, 255

Iodine: determination of adventitious heads in *Stenostomum leucops* by, 47; metamorphosis of Colorado axolotl induced by, 149

JOHNSON, GEORGE EDWIN, and SAYLES, EVERETT DUANE, The effects of daily injections of bovine anterior pituitary extract upon the developing albino rat, 285

KEYS, ANCEL B, and SUMNER, F. B., The effects of differences in the apparent source of illumination upon the shade assumed by a flatfish on a given background, 495

Lactose: effect of, on water content of *Amoeba*, 552; effect of, on gel-sol ratio in *Amoeba*, 561

Leptoplana: conditioned response in, 322; function of brain in, 329

LINDEMAN, VERLUS F., Integumentary pigmentation in the frog, *Rana pipiens*, during metamorphosis with special reference to tail-skin histolysis, 255; the physiology of the crustacean heart. II. The effect of lithium, ammonium, strontium, and barium ions upon the heart rhythm of the crayfish (*Cambarus clarkii*), 395

Lithium, effect of, on heart rhythm of crayfish, 395, 398

Male production: control of, in Cladocera, 80, 93, 302, 309; in crowded and uncrowded cultures of the rotifer, *Hydatina senta*, 269

Mechanical stimulation: effect of, on water content of *Amoeba*, 547; effect of, on gel-sol ratio in *Amoeba*, 566

Melanoplus differentialis: effect of temperature on oxygen consumption of, 275; factors influencing respiratory metabolism of, 459

Metamorphosis: of Colorado axolotl induced by inorganic iodine, 149; integumentary pigmentation in frog during, 255; growth and differentiation of tongue in *Rana pipiens* during, 334; atrophy of anuran tail muscle during, 575

MITCHELL, J. B. JR., Experimental studies of the bird hypophysis. I. Effects of hypophysectomy in the brown leghorn fowl, 411

Moina macrocopa, control of male production in, 80, 93, 302, 309

Nasal placode, effect of transplantation of portions of, to limb site in *Amblystoma*, 99

Neoteny, in Colorado axolotl, 149

Nerve development, experimental modification of, in *Amblystoma*, 99

NUSSBAUM, T. C., and WIEMAN, H. L., Experimental modification of nerve development in *Amblystoma*, 99

Optic vesicle, effect on nerve development of transplantation of, to limb site in *Amblystoma*, 99

Organizers: lateral grafts and incisions as, in *Corymorpha*, 342; in amphibian development, 366

Orthoptera, species of, used in study of respiratory metabolism of developing eggs, 460

Osmic acid, differential reduction of, in cortex of *Paramecium*, 449

Ovariectomy, effect of, on spontaneous activity and ability to learn, of albino rat, 157

Oxygen consumption: effect of temperature on, in *Melanoplus differentialis*, 275; factors influencing, in developing orthopteran eggs, 459; rhythmic changes in, in developing orthopteran eggs, 465, 467; effect of oxygen tension on, in *Planaria* and some echinoderms, 505

Oxygen tension, effect of on oxygen consumption in *Planaria* and some echinoderms, 505

Paramecium: effect of density of population on rate of reproduction in, 221; temperature-axial relations to rate of division in, 225; allelocatalytic effect in cultures of, 232; excretion of nitrogenous substances in, 375, 379; rate of nitrogenous excretion in, 382; differential reduction of osmic acid in cortex of, 449; differential reduction of osmic acid in anterior and posterior vacuoles of, 451

PARK, ORLANDO, The differential reduction of osmic acid in the cortex of *Paramecium* and its bearing upon the metabolic gradient conception, 449

Patiria miniata, effect of oxygen tension on oxygen consumption of, 525

PETERSEN, WALBURGA A., The relation of density of population to rate of reproduction in *Paramecium caudatum*, 221

Planaria: effect of refrigeration on growth-promoting power of rabbit tissues for, 491; effect of oxygen tension on oxygen consumption of, 504, 511

Population density, in relation to rate of reproduction in *Paramecium caudatum*, 221

Potassium cyanide: possible effect of, in determining adventitious heads in *Stenostomum leucops*, 47; relation between embryonic volume and susceptibility to, in *Amblystoma punctatum*, 125

Protoplasmic structure, of *Amoeba* in relation to changes in water content, 535

Protozoa, excretion of nitrogenous substances in, 375

Rabbit: antibody formation against own tissues in, 169; effect of refrigeration on growth-promoting power of tissues of, for *Planaria*, 491

Rana clamitans, atrophy of tail muscle during metamorphosis of, 575

Rana pipiens: integumentary pigmentation in, during metamorphosis, 255; histolysis of tail skin in, 262; growth and differentiation of tongue during metamorphosis of, 334

Reconstitution: an experimental study of, in *Stenostomum*, 18; of *Stenostomum langi*, 20; of *Stenostomum grande*, 23; of *Stenostomum tenuicauda*, 24; of *Stenostomum leucops*, 31, 54; influence of sexuality on, in *Stenostomum grande*, 48

Refrigeration, effect of, on growth-promoting power of rabbit tissues for planarians, 491

Reproductive capacity, of guinea-pig spermatozoa in relation to high temperature, 1

Respiratory metabolism, factors influencing rate of, in developing orthopteran eggs, 459

ROGERS, EDITH, The effect of temperature on the oxygen consumption of an insect, *Melanoplus differentialis*, 275

SAYLES, EVERETT DUANE, and JOHNSON, GEORGE EDWIN, The effects of daily injections of bovine anterior pituitary extract upon the developing albino rat, 285

Scrotum, new evidence for the function of, 9

Sex, control of, in Cladocera, 80, 93, 302, 309

SHEVKET, FAZILÉ, and ADAMS, A. ELIZABETH, The normal blood picture of white rats and the changes in the picture following thyroid feeding, 181

Spermatozoa: effect of high temperature on reproductive capacity of, in guinea pig, 1; effect of X-rays on *Drosophila*, 172

Spirostomum: excretion of nitrogenous substances in, 375, 379; rate of nitrogenous excretion in, 384; method of nitrogenous excretion in, 391

Stenostomum grande: identification of, 21; reconstitution of, 23, 52; sexuality in, 48

Stenostomum langi, reconstitution of, 20

Stenostomum leucops: description of, 21; reconstitution of, 31, 54; effects of different culture media on reconstitution of, 38; fission in headless pieces of, 41; adventitious heads in, 44

Stenostomum tenuicauda: identification of, 21; reconstitution of, 24, 52

Strongylocentrotus purpuratus, effect of oxygen tension on oxygen consumption of, 525

Strontium, effect of, on heart rhythm of crayfish, 401

SUMNER, F. B., and KEYS, ANCEL B., The effects of differences in the apparent source of illumination upon the shade assumed by a flatfish on a given background, 495

Susceptibility: relation of, to embryo volume in *Amblystoma punctatum*, 125; to KCN made up in different solutions, 131

Temperature: effect of high, on reproductive capacity of guinea-pig spermatozoa, 1; effect of, on oxygen consumption of *Melanoplus differentialis*, 275, 459

Thyroidectomy, in Colorado axolotl, 151

Tongue, growth and differentiation of, during anuran metamorphosis, 334

TUTTLE, W. W., and DYKSHORN, S., A comparison of spontaneous activity of the albino rat with the ability to learn, with special reference to the effect of castration and ovariectomy on these processes, 157

Ultra-violet radiation: adventitious heads in *Stenostomum leucops* determined by, 45; as means of inducing antibody formation against an animal's own tissues, 169, 170

Urea: effect of, on water content of *Amoeba*, 554; effect of, on gel-sol ratio in *Amoeba*, 562

VAN CLEAVE, C. D., An experimental study of fission and reconstitution in *Stenostomum*, 18

Water content: of developing orthopteran eggs, 475; changes of, in *Amoeba* in relation to changes in protoplasmic structure, 535; effect of mechanical stimulation on, in *Amoeba*, 547; effect of hypertonic solutions on, in *Amoeba*, 549; effect of hydrogen-ion concentration on, in *Amoeba*, 557

WEATHERBY, J. H., Excretion of nitrogenous substances in Protozoa, 375

WHITNEY, DAVID D., Male production in crowded and uncrowded cultures of the rotifer, *Hydatina senta*, 269

WIEMAN, H. L., and NUSSBAUM, T. C., Experimental modification of nerve development in *Amblystoma*, 99

X-rays, effect of, on spermatozoa of *Drosophila*, 172

YOUNG, WILLIAM C., The influence of high temperature on the reproductive capacity of guinea-pig spermatozoa as determined by artificial insemination, 1